

Introducing the Columbia River Treaty and its review

Eureka, MT

May 15

2013 Spring Open Houses



Today's presentation

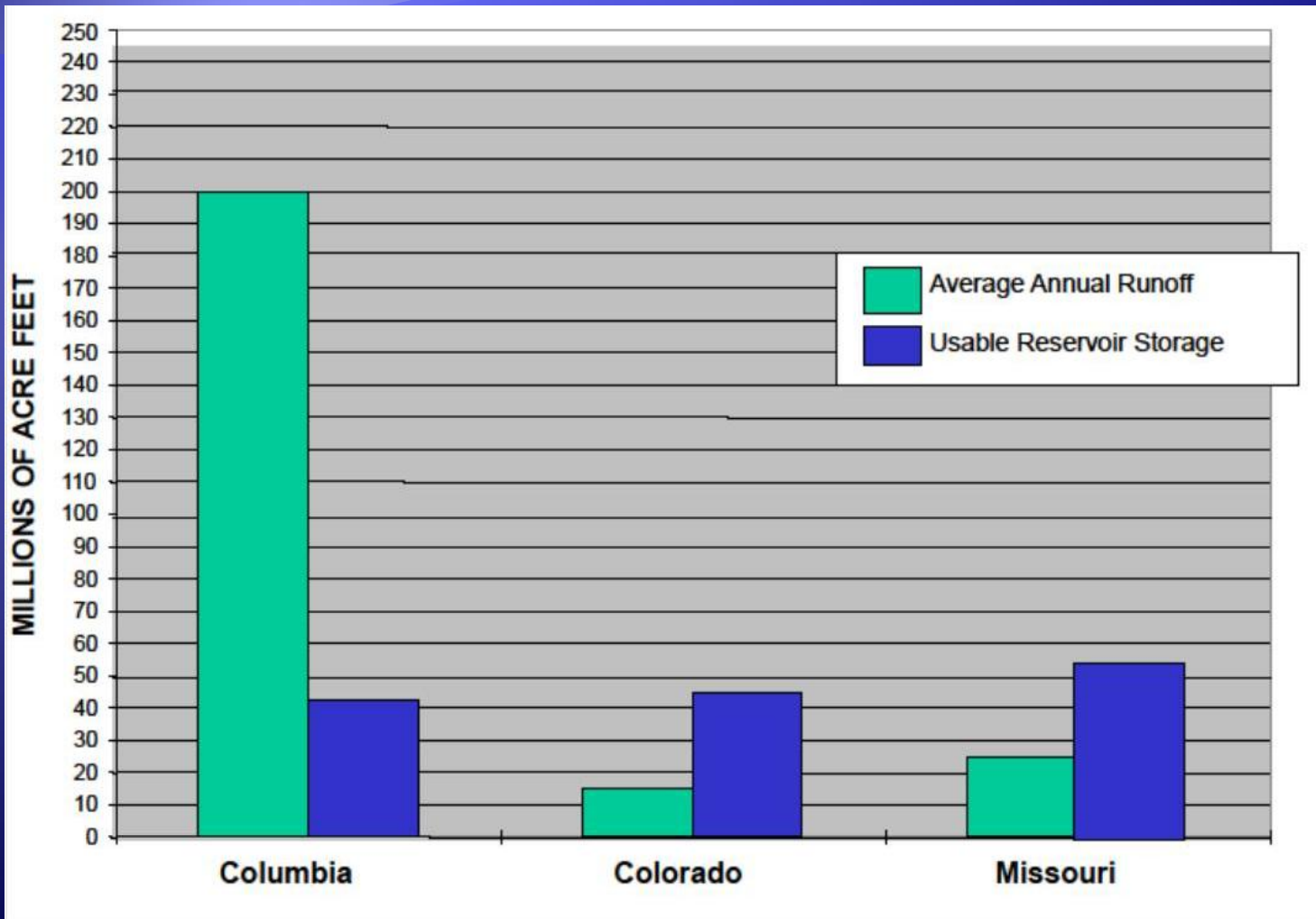
- ◆ Treaty Basics
- ◆ Purpose and process for Treaty Review
- ◆ Stakeholder involvement and input
- ◆ Why this matters to your area
- ◆ Next steps

The Columbia River



- ◆ Originates in Canada
- ◆ Flows over 1,240 miles through 2 countries
- ◆ 259,000 square mile drainage area
- ◆ 15% of basin area in Canada with 38% average annual flow from Canada.
- ◆ Over 60 large dams and reservoirs owned and operated by many different entities for multiple purposes.

Western U.S. river basins



System operated for multiple uses

- Flood risk management
- Hydropower
- Fish and wildlife
- Navigation
- Water supply
- Recreation



What is the Columbia River Treaty?

An agreement to manage water for flood risk management and power

Between Canada and the U.S.
Implemented in 1964

“Relating to International
Cooperation in Water Resource
Development in the Columbia
River Basin”



Treaty monument at Libby Dam (Montana)

Primary purposes

Flood Risk Management

Capture the spring snowmelt in Canada to refill the reservoirs and manage peak flood flows along the Columbia and specifically at Portland, OR.



Power

Release water from Canadian Treaty reservoirs for power production at all Columbia River dams from Mica in British Columbia through Bonneville, east of Portland

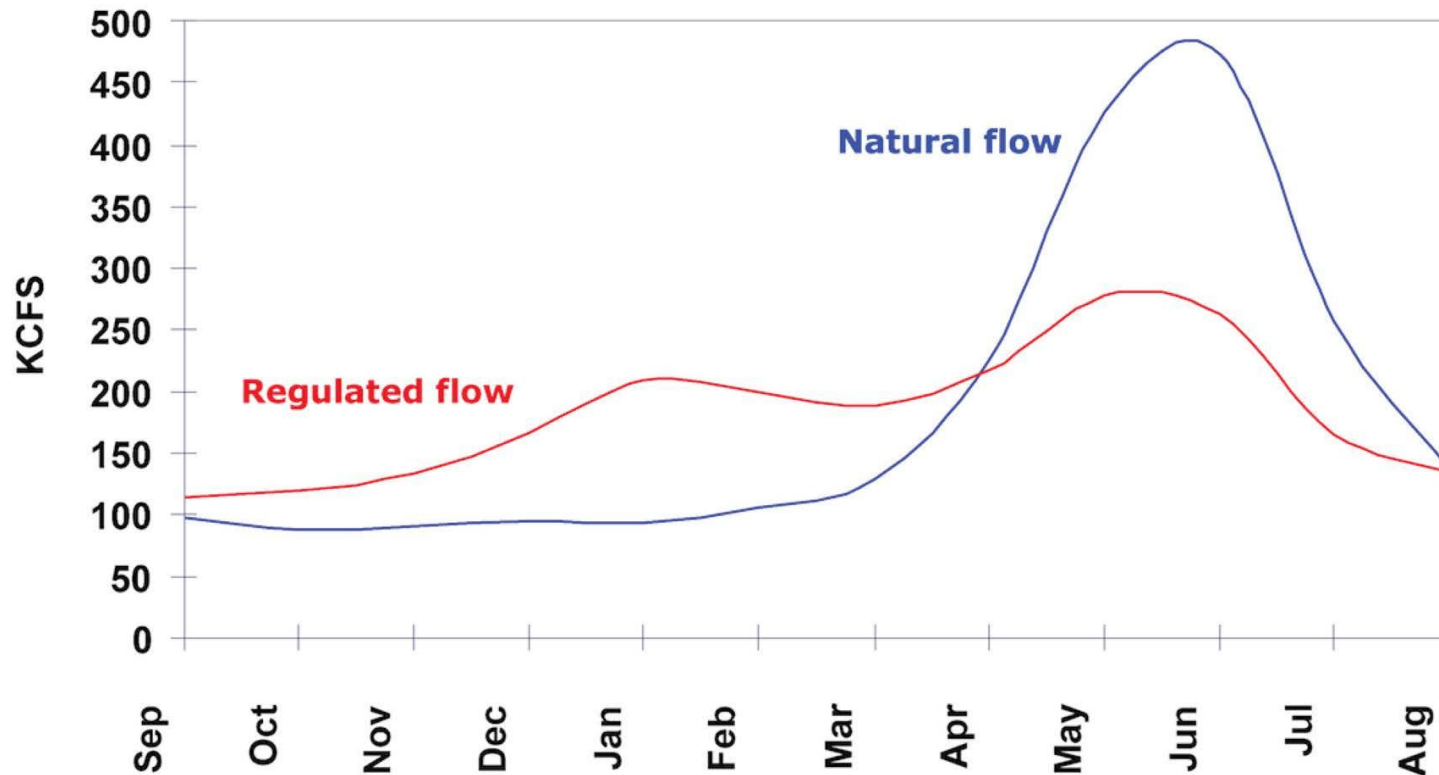
1948 flood devastated homes, farms, and levees from Trail, British Columbia to Astoria, Oregon

Bonners Ferry, ID

Construction and operation under the Treaty

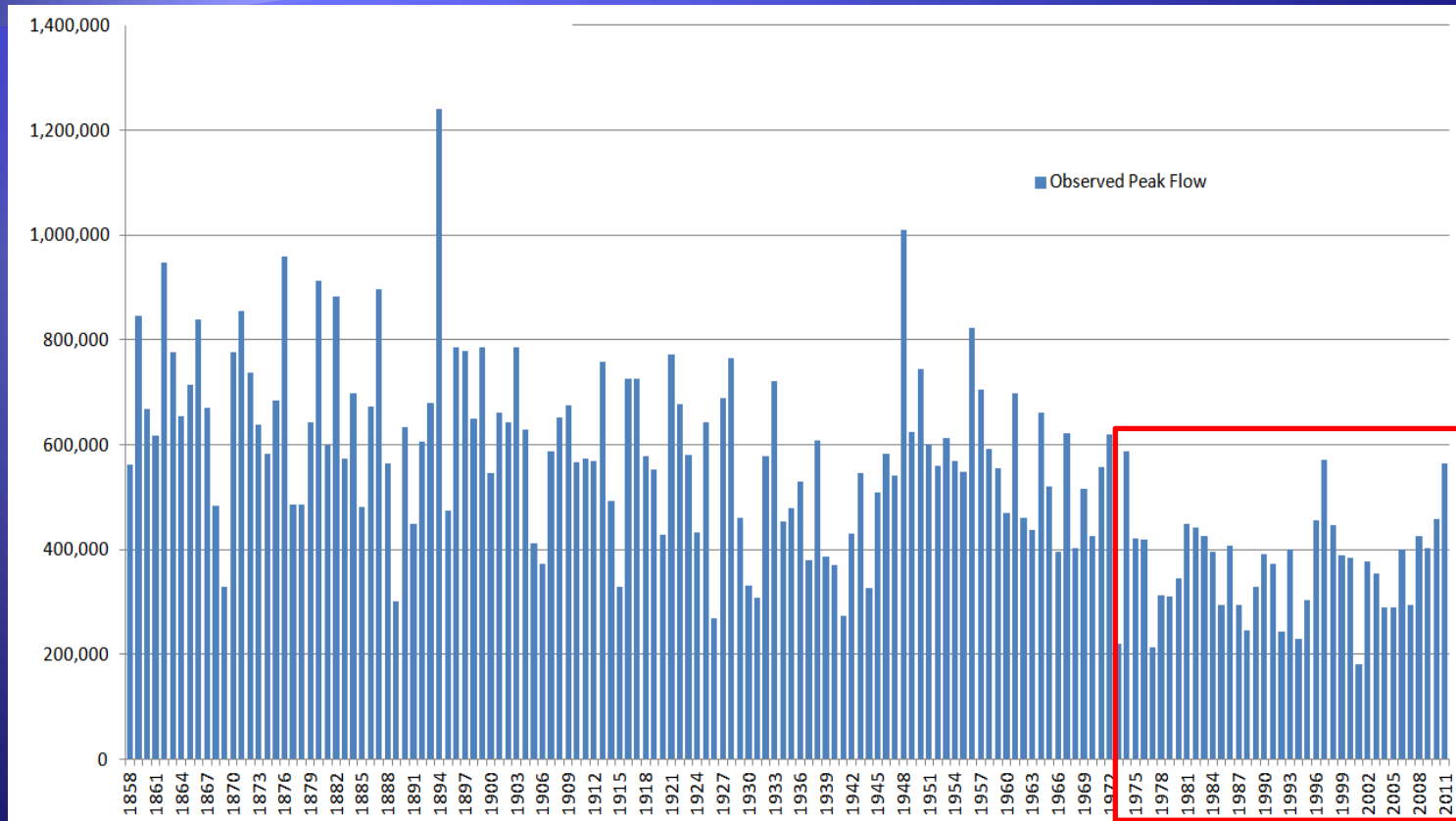
- ◆ Required Canada to construct and operate 3 large dams (Mica, Arrow and Duncan) with 15.5 million acre-feet of storage for optimum power generation and flood control downstream in Canada and the U.S.
- ◆ Allowed the U.S. to construct and operate Libby Dam with 5 million acre-feet of storage on the Kootenai River in Montana.

Flow management



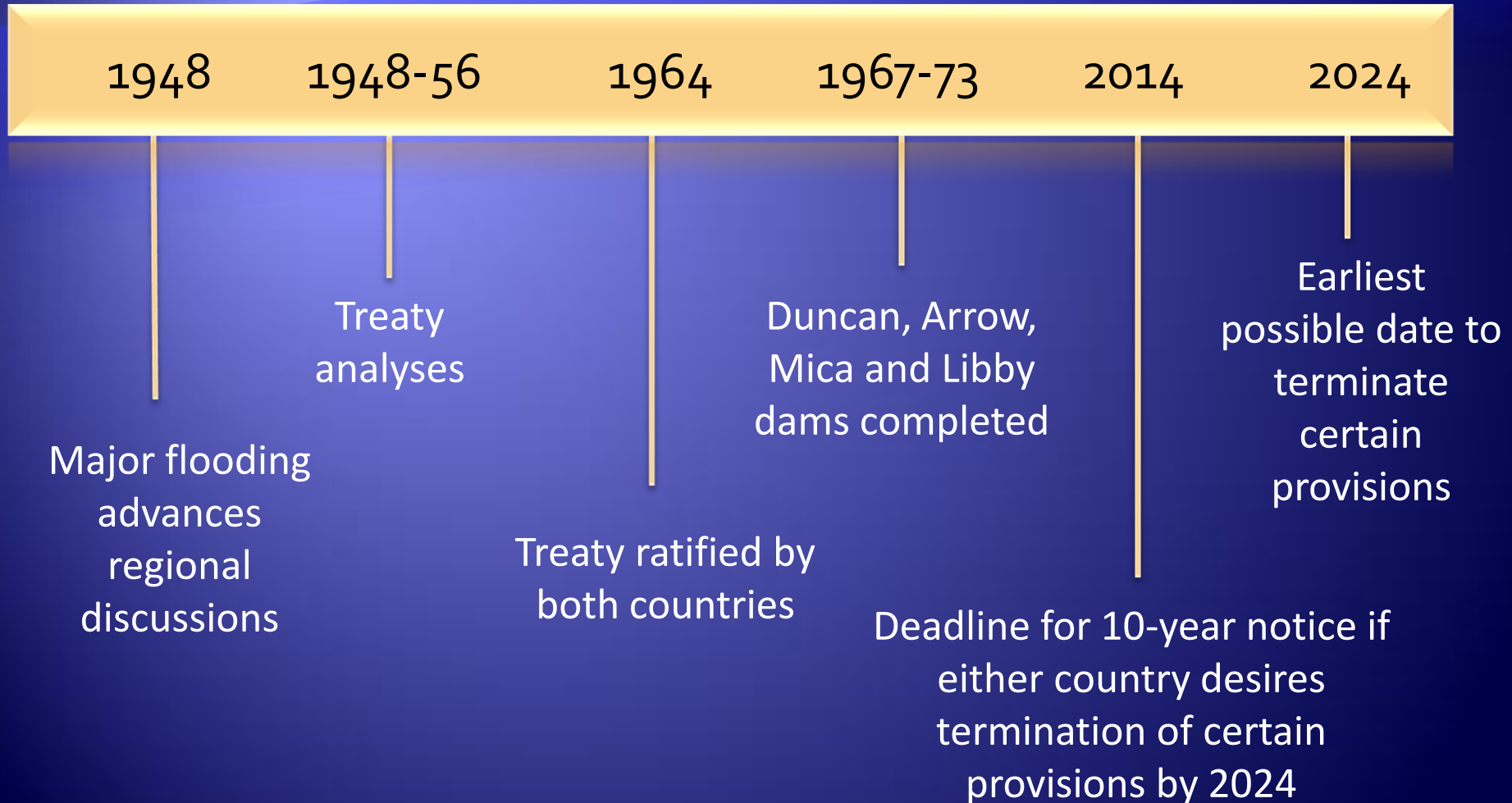
Kcfs is a flow rate measured by 1000 cubic feet of water per second

Peak flow history (measured at The Dalles, OR)



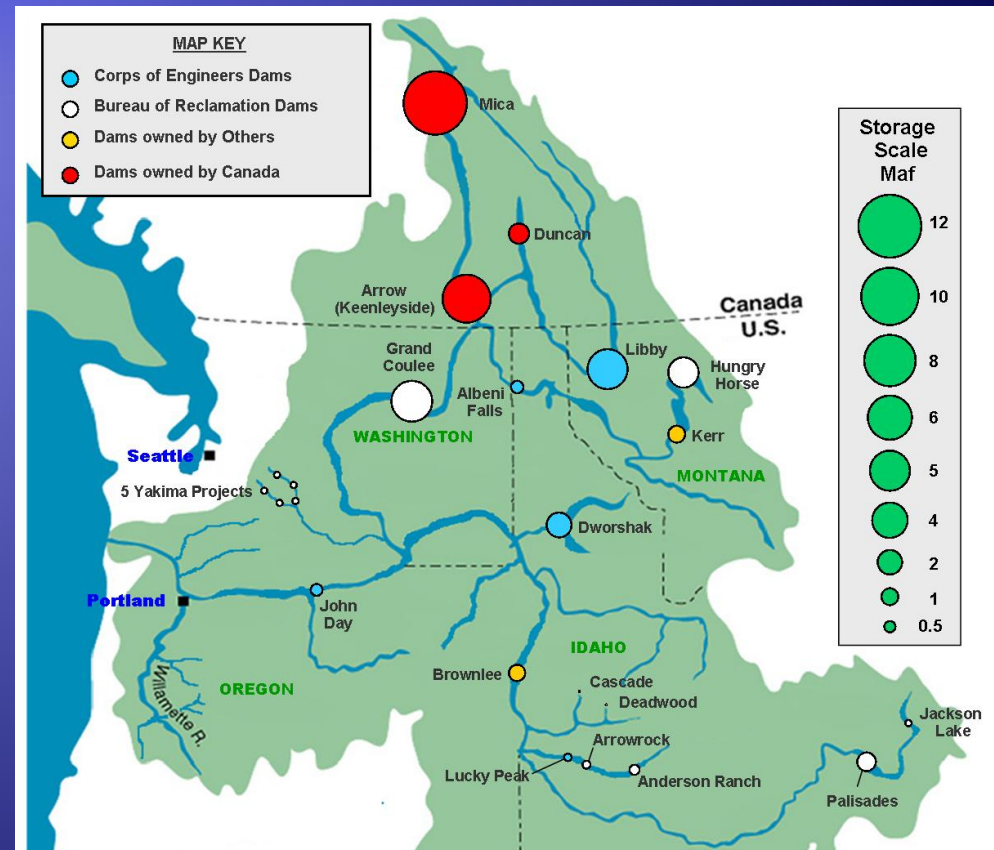
Kcfs is a flow rate measured by 1000 cubic feet of water per second

Key dates



Treaty benefits

- ◆ Canadian storage (up to 51% of total basin capacity)
- ◆ Infrastructure and governance
- ◆ Optimizes system for power and flood risk management
- ◆ Provides ecosystem benefits



Power provisions

- ♦ Canada must operate 15.5 million acre-feet of Treaty storage to optimize power generation downstream in both nations.
- ♦ U.S. must deliver power to Canada equal to one-half the estimated U.S. power benefits from Canadian Treaty dam
 - ♦ This **Canadian Entitlement** worth \$250-\$350 million annually.
 - ♦ British Columbia owns Canadian Entitlement
- ♦ Five mid-Columbia non-federal hydro projects deliver 27.5% of Canadian Entitlement to BPA for delivery to B.C.



Flood risk management provisions

- ◆ Canada currently obligated to operate 8.95 million acre-feet* of storage to help eliminate or reduce flood damages in both countries.
- ◆ U.S. paid Canada \$64.4 million for expected future flood damages prevented in U.S. from 1968 through 2024.
- ◆ Canada must operate all additional storage in these dams on an on-call basis (as requested and paid for). *This has never been used to date.*

Bottom line: Assured flood storage terms expire in 2024

* an acre-foot is 1 acre of water to a depth of 12 inches

Organization



U.S. Entity:

- Bonneville Power Administration Administrator
- U.S. Army Corps of Engineers' Northwestern Division Engineer

Canadian Entity:

- B.C. Hydro, a province-owned electric utility
- Province of British Columbia (disposal of Canadian Entitlement)₅

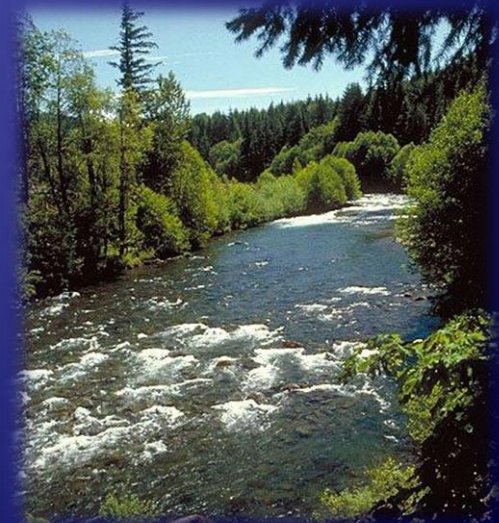
Why review the Treaty now?

- ◆ While Treaty has no specified end date, either nation can unilaterally terminate most provisions as early as September 2024 with 10 years' written notice.
- ◆ 2014 is the deadline for either nation to declare its intentions to terminate at the earliest possible date of 2024.
- ◆ Prepare for important changes in flood risk management provisions that start in 2024.

Treaty Review goal

- ◆ Determine
 - ◆ Is the United States better off without certain provisions of the Treaty?
 - ◆ How we can modernize the Treaty to meet current water management demands and needs

Enable the U.S. Entity to provide an informed and regionally supported recommendation to the U.S. Department of State by end of 2013.



Evaluating potential change

- ◆ What are benefits and impacts on :
 - ◆ Hydropower
 - ◆ Flood risk management
 - ◆ Ecosystem functions
 - ◆ Water supply
 - ◆ Navigation
 - ◆ Recreation
- ◆ Better understand sensitivity of future operations to climate change

Treaty Review is not

- ◆ A National Environmental Policy Act (NEPA) process
- ◆ An Endangered Species Act (ESA) process
- ◆ The development of a detailed operational plan or implementation plan for the Columbia Basin

Evaluating flood risk management

Changes in 2024	In Treaty Review
<ul style="list-style-type: none">■ Procedures for assured flood control end in 2024, with or without changes to other Treaty provisions.	<ul style="list-style-type: none">■ What is the level of flood risk certainty for the U.S. when this protection expires?
<ul style="list-style-type: none">■ The U.S. must “call upon” Canada for flood management assistance and pay associated costs.	<ul style="list-style-type: none">■ How often will the U.S. have to call upon Canada for flood risk protection?■ How much will it cost?
<ul style="list-style-type: none">■ The U.S. must make effective use of its reservoirs before calling on Canada.	<ul style="list-style-type: none">■ How does effective use impact U.S. reservoirs and ecosystems?

Where we are now



Evaluating hydropower provisions and Canadian Entitlement

- What are the actual power benefits to the U.S. from the operation of the Canadian projects?
- Is the Canadian Entitlement a true reflection of the power benefits resulting from Treaty operation?
 - If not, what is a more equitable payment?
 - What should the Canadian Entitlement look like after 2024?

To answer the questions

Understand

- Impacts and benefits of current Treaty
- Today's regional needs and priorities.
- Possible future needs & priorities

Ask

- Can the current Treaty meet those needs?
- Does the Treaty need to be changed?
- Modify current Treaty or develop new one?

Analyze & Answer

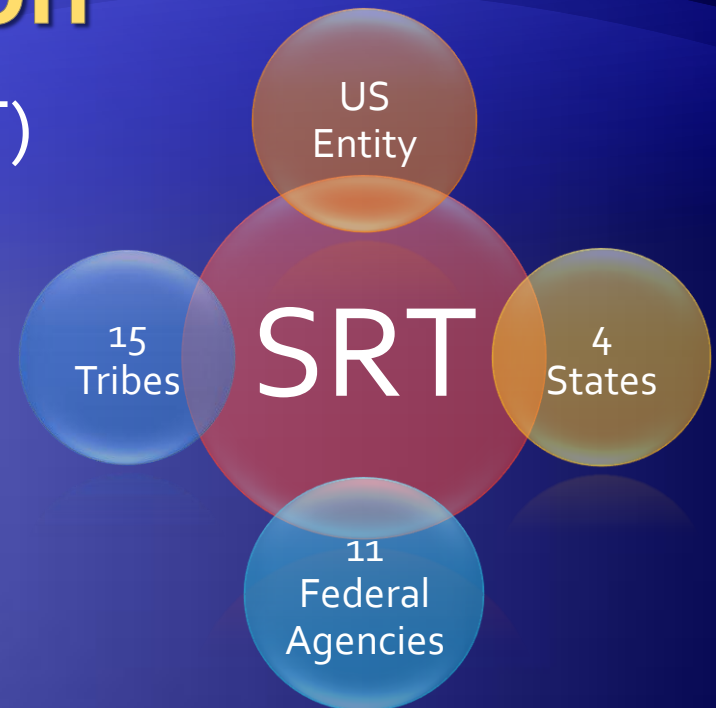
- Collect information
- Evaluate policies, options and potential results
- Assess impacts

Provide

Informed, regionally supported recommendation

Regional collaboration

- ◆ Sovereign Review Team (SRT)
 - 4 States
 - 15 Tribes (5 representatives)
 - 11 Federal Agencies
- ◆ Sovereign Technical Team
 - Technical leads and staff representing SRT members
- ◆ Each team has been meeting at least monthly since Fall 2010
- ◆ Influence and advise on every aspect



Regional stakeholders and public

- ◆ Make sure we are accountable
 - Transparency, clarity in the process
 - Frequent involvement opportunities
- ◆ Since 2011
 - Over 55 meetings, presentations and discussions with a wide variety of interests throughout the four-state region
 - Find summaries of comments:
www.crt2014-2024review.gov/CurrentMeetingMaterials.aspx

Regional and national coordination

- ♦ U.S. Department of State
 - Monitoring and engaged in Treaty Review
- ♦ Interagency Policy Committee (IPC)
- ♦ Regional federal agency coordination
- ♦ Congressional delegation

Coordination with Canada

- ◆ Ongoing Treaty implementation
- ◆ Separate but parallel Treaty Review process
- ◆ Communication on possibilities within current Treaty framework

Please note

- ◆ The ultimate decision to terminate certain provisions or pursue negotiations to modify the Treaty rests with the U.S. Department of State and the White House.

Study process

Iteration 1

Develop & test alternative approaches to river management *

Iteration 2

Gather more information on specific objectives related to flood risk, hydropower and ecosystem
Refine modeling approaches

Iteration 3

Combine information from Iterations 1 & 2
Test how combined operations and approaches can improve or impact various purposes and objectives

Recommendation

* Initial consideration of:

- Effective Use and Called Upon
- Non-coordinated Canadian operation

Defining Alternative and Components

Alternative

- ◆ Considers incorporation of multiple objectives and purposes such as hydropower, flood risk, ecosystem and water supply
- ◆ Could be implemented as generally designed

Component

- ◆ Formulated to focus on only one objective or purpose
- ◆ Not intended as stand-alone alternatives that can be realistically implemented
- ◆ Used to better understand the operation and explore the “bookends” of the Columbia River system for a single purpose

Scope of Iteration 2 studies

Advance 3 alternatives from Iteration 1 for full impact assessment

- 1A-TC: Treaty Continues with 450 kcfs flood flow
- 2B-TC: Treaty Continues with 600 kcfs flood flow
- 1A-TT: Treaty Terminates with 450 kcfs flood flow

RC-CC (Reference Case, Current Condition)

- This is how the system is now under current Treaty provisions and current U.S. operations
- All alternatives and components are compared to the current condition

Iteration 2 components – Ecosystem

E1 – Natural Spring Hydrograph

Store and release water from U.S. and Canadian reservoirs to meet a natural flow based on the type of water year, no system flood control, no operation specifically for power

E2 – Reservoirs as Natural Lakes

Generally hold reserves full and pass inflows through, no system flood control, no operation specifically for power

E3 – Summer Flows

Store water in Canadian projects during the fall and release to augment summer flows in U.S.

E5 – Dry Year Strategy

Store water in Canadian projects during winter/early spring to augment spring flow in lowest 20% of water years

Iteration 2 components – Hydropower

H1 – Optimize Canadian and U.S. hydropower system

Optimize Canadian and U.S. hydropower systems using current projects

H2 – Optimize Canadian and U.S. power system with Biological Opinion operations included

Including fish operations, optimize the Canadian and U.S. hydropower system using current system projects

Iteration 2 components – Flood risk

F1 – Full use of authorized storage

Maximize use of authorized U.S. storage (full draft as needed)

F2 – No Called Upon flood storage

No use of Canadian storage for U.S. flood risk management

F3 – Modify U.S. levees to perform to authorized levels

Evaluate ability to reduce U.S. flood risk if all U.S. levees perform to authorized level

Iteration 2 Impact Assessment

- Ecosystem-based function
 - Water quality
 - Resident fish
 - Anadromous fish
 - Estuary
 - Wildlife
 - Cultural resources
- Flood risk management
- Hydropower
- Water supply
- Recreation
- Navigation
- Sediment and toxics
- Climate change

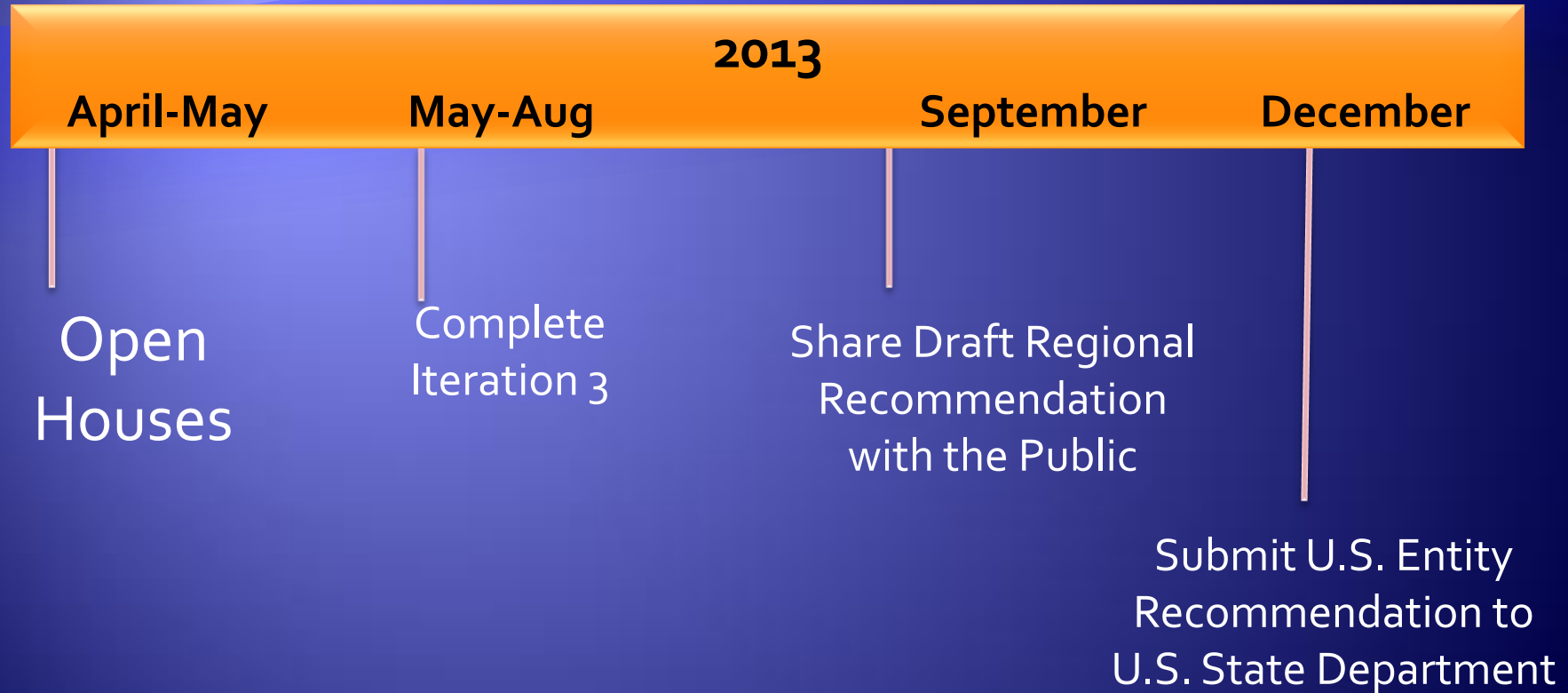
What we know now

- ◆ Canadian Entitlement should reflect one-half actual power benefits from the Treaty operation
- ◆ Identify opportunities and approaches for incorporating additional ecosystem operations into the Treaty where possible
- ◆ The Corps' objective is similar level of flood risk after 2024 as currently provided

What's up for Iteration 3?

1. Further assess what we learned in Iterations 1 and 2
2. Consider all input and comments from sovereigns and stakeholders
3. Model, analyze, and assess benefits and impacts of 2-3 additional future Treaty scenarios

Next steps



For more information

- ◆ Visit www.crt2014-2024review.gov
- ◆ Email treatyreview@bpa.gov
- ◆ Read Treaty Review fact sheets
- ◆ Call
 - ◆ Bonneville Power Administration, 800-622-4519
 - ◆ Corps of Engineers, 503-808-4510

Comments welcome

- ◆ Today:
 - ◆ Write them down and leave with staff
- ◆ After the meeting:
 - ◆ Email treatyreview@bpa.gov
 - ◆ Call: BPA or the Corps
 - ◆ Mail: Bonneville Power Administration, PO Box 3621
Portland, OR 97208-3621
 - ◆ FAX: 503-230-4563

Discussions to follow:

Iteration 3

Treaty Review Recreation Analysis

Thank you for coming!